ABSTRACT

The invention includes a method for selecting sensors from a sensor network for tracking of at least one target having the steps of defining an individual of a genetic

5   algorithm construct having n chromosomes, wherein each chromosome represents one sensor, defining a fitness function based on desired attributes of the tracking, selecting one or more of the individuals for inclusion in an initial population, executing a genetic algorithm on the initial population until defined convergence criteria are met, wherein execution of the genetic algorithm has the steps of choosing the fittest individual from the

10   population, choosing random individuals from the population and creating offspring from the fittest and randomly chosen individuals. Another embodiment of the invention includes another method for selecting sensors from a sensor network for tracking of at least one target having the steps of defining an individual of a genetic algorithm construct having n chromosomes, wherein each chromosome represents one sensor, defining a

15   fitness function based on desired attributes of the tracking, selecting one or more of the individuals for inclusion in an initial population, executing a genetic algorithm on the population until defined convergence criteria are met, wherein execution of the genetic algorithm has the steps of choosing the fittest individual from the population, and creating offspring from the fittest individual wherein the creation of the offspring occurs

20   through mutation only, wherein only i chromosomes are mutated during any one mutation, and wherein i has a value of from 2 to n-1. The invention also includes a network of sensors for tracking objects that includes a number, N of sensors, a means for the N sensors to communicate with a controller, and a controller capable of controlling and managing the N sensors by utilizing one of the methods of the invention.

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